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ABSTRACT

The process of planning the role of the microcomputer in higher education administration is investigated through a survey of a sample of universities and colleges in California engaged in such efforts, and through a review of literature in education as well as computing. A major objective of the study was to systematically investigate the approaches used by higher education administrators in planning for the smooth integration of microcomputers into administrative functions and processes. The study identifies the types of issues administrators considered in developing plans for acquiring and implementing microcomputer systems and solutions, and the types of applications used. The state of planning in this growing area is then assessed, and issues that ought to be addressed in the planning process are identified and discussed. These include (1) the need for uniform equipment standards, (2) selection of systems to readily meet telecommunications needs, (3) determination of cost effective maintenance options, and (4) the need for effective user training and support. References are included, and the instrumentation used in the survey is appended. (TE)

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PLANNING THE USE OF MICROCOMPUTERS IN HIGHER EDUCATION ADMINISTRATION

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Abstract

Planning the role of the microcomputer in higher education administration is investigated through a survey of a sample of universities and colleges in California engaged in such efforts, and through a review of education as well as computing literature. The state of planning in this growing area is assessed. Finally, issues that ought to be addressed in the planning process are identified and discussed.

Objectives

A major objective of the study was to systematically unearth the approaches used by (and useful to) higher education administrators in planning for the smooth integration of microcomputers into administrative functions and processes. Also, the types of issues administrators considered in developing plans for acquiring and implementing microcomputer systems and solutions, and the types of applications utilized were determined. This study was designed to support planning, policy making, and decision making efforts. A critical question faced by many university administrators willingly or unwillingly is, "What is the appropriate role of the microcomputer in university administration?" The study seeks to provide guidance in answering this question.

Review

In the short span of five years, microcomputers have already established a significant presence in the "toolkits" of education administrators. The many uses such as office automation tools and database management systems are described elsewhere (Spuck and Atkinson, 1983), and others still (Brown, 1983; Brown and Droegemueller, 1983) address more specifically the decision support systems role of microcomputers. They argue that decision support applications through software tools like spreadsheets, computer graphics, and database management systems are particularly suited for increasing administrative productivity. These tools augment the more traditional but time saving office automation tools like wordprocessing, task management, and calendar scheduling. Electronic mail is another time saving communications aid that is mentioned.

Just as it is not likely that microcomputers will replace instructors in the classroom (Chapman 1985), micros probably will not be replacing any staff or administrators. Rather, they will be used as a productivity tool and will refocus managerial efforts to include new tasks. There are signs that higher education managers and administrators are already changing the way they do business. Some industry leaders are predicting "a time in the not too distant future when the micro, or whatever they are called, will be a necessary tool of the dean, business manager or president" (Evans and Coffey, 1984: p. 20). The proliferation of microcomputers in higher education has been so widespread that some universities have even institutionalized

the process: For example, according to Gale (1983), Cornell University reorganized its computing services to not only include the three traditional subdivisions -- systems and operations, administrative computing, and instructional computing -- but to include a fourth subdivision, "Decentralized Computing" to deal expressly with the problems, issues, policies, and opportunities associated with the new ubiquitous presence of micros on the campus.

But the challenges of the transition to the new micro technology are not easily answered by a simple reorganization of services: in 1983 this very issue (i.e. the growth of micros), was the "hot" topic of the CAUSE National Conference, where a forum was held entitled "Micros on Campus: Policy Issues." Here, issues like maintenance demands, hardware and software procural standards and policy, user training, self help, and linking through networks surfaced. The issues surfaced as more of a knee jerk reaction to a rising tide than through a strategically planned approach toward shepherding in the new technology.

One writer (Emery 1984), on the other hand, provides more planning and policy guidance by assessing the trends, their implications and by suggesting some reasonable planning assumptions. Particularly helpful are his economic insights about deceptive, low unit prices which add up as large numbers of units are purchased and realistic "full" costing including peripherals, software, maintenance, technical support, etc. More important, however, is the wholistic discussion of strategic positioning (i.e. technological leader, early follower

or casual follower) and the checklist of issues in strategic planning for information technology.

Significant among issues is the networking issue associated with linking micros to each other and to other, larger resource machines. That micros will communicate is not a given; while some of the communications problems have been solved, machine incompatibility and lack of communications protocol standards leave much to be desired. Brooks and Creutz (1984) discuss the need and the current difficilties. While not a reality today, a network of linked micros is thought by some (Harris, 1983) to be the next significant step in improving college computing. Even some of the major players are banking on the importance of networking: "An Apple spokeswoman said that ... it had jumped at the chance to work with Pacific Bell because Apple believed communications will be the driving application for getting more computers into the home" (Weber, 1985).

While previous literature on microcomputers in higher education administration identifies the important issues, the prespective taken is usually based on a single or small group colleges of universities experiences. The current study broadens the perspective by sampling the experiences of administrators across both public and private colleges and universities in California.

Methods and Data Sources

The method employed combined several data gathering efforts. First, a computerized search of the literature uncovered specific planning efforts in higher education institutions. These studies were reviewed with the objective of identifying the planning models and approaches utilized, the issues dealt with by planners, and the outcomes in terms of recommended directions. The important issues were molded into questions for an interview/survey instrument (see Appendix A). Next, the study utilized a telephone survey of 22 California postsecondary institutions to gather data regarding philosophy, campus policy, procedures, and problems. Institutions were selected by size and type and control including 15 public and 7 independent institutions. For the most part, computer center directors or assistant directors were interviewed. In two cases microcomputer specialists were questioned.

Interviewers probed respondents for detail regarding the history, implementation and effectiveness of campus policies and procedures. Data were coded by the authors and analyzed statistically using SPSS (Nie, 1975).

Findings

The 22 campuses interviewed had a total of 1,029 administrative microcomputers currently in use and planned the acquisition of 559 more next year, representing a 54 percent annual growth rate. The campuses ranged in size from 1,000 to 35,000 students (averaging

15,256) and currently used between 0 and 200 microcomputers (averaging 49) and planned for the purchase of 0 to 200 (averaging 29) next year.

A total of 33.3 percent of the responding institutions had formal written policies governing the acquisition and use of administrative microcomputers 23.8 percent, reported having informal policies as 38.1 percent had no policy at all. Two respondents declined to answer or did not know.

Ten institutions had policies that specified manufacturers, two campuses limited the selection of hardware, and seven had no policy. There was no significant correlation between having a policy governing the acquisition of microcomputers and specifying or limiting the selection of hardware. For example, of the seven campuses having formal written policies governing the acquisition and use of micros, three had policies specifying hardware manufacturer, one limited the selection and three allowed complete user discretion.

Wordprocessing was the most popular use with 89.5 percent of those responding placing it first. Spreadsheet applications were a clear second, database programs a clear third, telecommunications, graphics and electronic mail were a close fourth, fifth and sixth with integrated software seventh.

Microcomputer Use	Rank
Wordprocessing	1
Spreadsheet	2
Database	3
Telecommunications	4
Graphics	5
Flectronic Mail	6
Integrated Software	7

Only four of the institutions surveyed had a centralized software library. Ten institutions reported that they share software informally between offices. Seventeen institutions reported that they allow users to select software.

Fourteen institutions, 73.7 percent of those responding to the question, indicated that they provided a microcomputer training program to administrative personnel. Among the fourteen institutional traing programs identified, one was operated by administrative personnee, 10 were operated by computer center personnel and one relied on auto tutorial programs.

Ten institutions networked microcomputers -- only four reported that they had problems linking microcomputers.

The fourteen institutions estimating administrative microcomputer expenditures, said they spent $2,270,000 on administrative microcomputers this year. Spending for new micros amounted to

approximately seven percent of the computing budget at the three campuses within the survey where total budgets were given.

The computer centers of 81.3 percent of the responding campuses provide machine service directly while 53.3 percent purchased service contracts. Only 29.4 percent budgeted administrative microcomputer service through the computer center while 70.6 percent budgeted service through each individual department.

Institutions responding to the survey indicated they expected on average a 35 percent discount on equipment and 78.9 percent indicated they purchased from local vendors.

Discussion

While many institutions had developed and were implementing microcomputing plans, the formal planning process was much more apt to cover larger mainframe and minicomputer networks than to plan explicitly for the microcomputing environment within administration. A few institutions, such as Carnegie Mellon (not surveyed), have developed long-range plans centering around networked microcomputers. In the current study, the following arguments were articulated as reasons for establishing a formalized process and written philosophy;

- o the lack of standards produced chaotic purchasing leading to problems with networking, machine maintenance and user training,
- o larger volume buying resulted in higher savings, better vendor relations and better user support,
- o acquiring "pools of similar equipment" provided backup in the event of breakdown,
- o equipment maintainence, service and user training could be funded and managed centrally providing faster more effective support,
- o the software support base tended to be larger providing greater user satisfaction and productivity.

Several institutions recognized the chaotic proliferation of microcomputers in higher education administration. One solution was to identify regional computing needs for mini computer applications which, when properly configured, can be more cost effective and provide lower cost workstations compared with micros. But the most predominate institutional response was to establish a "support incentive standard", that is to recommend hardware standards (brands) and to support only the recommended brands with training, maintenance, network links, and purchasing discount incentives. While alternative brands of micros were allowed, the lack of support provided a significant disincentive for users to "stray" from the pack.

One of the major benefits of the study effort was the identification of issues that require attention if a planning effort for micros is to be both realistic and successful. Issues identified by a number of institutions as needing consideration include: 1. developing

policies and standards for hardware and software acquisition, support, and maintenance; 2. selecting systems to readily meet telecommunications needs; 3. determining cost effective maintenance options; and finally, 4. providing for effective user training and support (including software support).

The importance of this paper is that it surveys higher education institutions on planning microcomputing environments to indicate current trends and uses, and identifies important issues that need to be addressed. In short, the paper serves as a primer for educational planners addressing the role of the microcomputer in the work place.

References

Brooks, A. and Creutz, A. "Mainframe/Micro Connection: The User's View". CAUSE/EFFECT, Volume 17, Number 5, September 1984 pp 20-23.

Brown, K. and Droegemueller, L. "Micro Computer use in Administrative Decision Support Systems". CAUSE/EFFECT Volume 6, Number 4, July 1983 pp 12-19.

Brown, Kenneth C. "The Administrator's Use of Microcomuter Systems" Administrator's Update. Volume 4, Number 3, Summer 1983 p 8.

Chapman, Dale J. Unpublished Micro Computers in Education Survey Results. Suom College, February 1985.

Emery, James C. "Issues in Building an Information Technology Strategy". EDUCOM Bulletin, Volume [illegible], Number [illegible], Fall 1984 pp [illegible].

Evans, B. and Coffey, J. "Computers and California Higher Education Managers". Transitions Systems and Computer Technology corp. Spring 1984 pp 20.

Forum: "Micros on Campus: Policy Issues. Current Issues Forum." Information Resources and The Individual. Proceeding of the CAUSE National Conference

Gale, Douglas. "Cornell's Strategy for the Micro Computer Revolution". EDUCOM Bulletin, Volume 18, Number 3-4, Fall-Winter 83.

Harris, Albert L. "Networking Micro Computers -- The next Generation in College Computing". Information Resources and The Individual, proceedings of the CAUSE National Conference, December 1983 pp 453-463.

Nie, N. et al. Statistical Package for the Social Sciences. McGraw Hill, 1975.

Spuck, D.W., and Atkinson,G. "Administrative uses of the Micro Computer" AEDS Journal: (Applications of Microcomputers for Instruction and Educational Management) Volume 17, Number 1-2, Fall-Winter 1983 pp 83-90.

Weber, Jonathan. "PacBell Files For ISDN Patents" article in MIS Wek, March 20, 1985, p 4.

APPENDIX A

SURVEY OF MICROCOMPUTERS
(Circle all that apply and fill in blanks)

1. Campus_____Contact_____

2. Campus Size - # of Students_____

3. Number of # Admin Micros now in place_____
   Planned for next year_____

4. Does your institution have a philosophy governing the aquisition, use and applications of microcomputers within the administrative framework? Is it written? or informal?

   a) 1) yes, written
      2) yes, informal
      3) no
      4) other_____

5. Does university policy specify

   a) Manufacturer?
      1) yes, which ones_____
      2) no
      3) selection limited
   b) Configuration e.g. DD, memory, etc.
   c) Software?
   d) Other?

6. What are the uses of microcomputers in your administration? Can you estimate:

   The percent of total use in the following areas:
   a) word processing _____
   b) spread sheet _____
   c) graphics _____
   d) telecommunications _____
   e) integrated software _____
   f) electronic mail _____
   g) other _____

7. Do you network your microcomputers?

   a) 1) no
      2) yes
   b) If so how
      1) LAN
      2) Through mainframes using telecommunications software
      3) Modems
      4) other

8. Does your university have a centralized administrative software library?

   1) yes
   2) no

9. Do you share software informally between offices?

   1) yes
   2) no

10. Does each user or office acquire and maintain their own software inventory?

    1) yes
    2) no

11. Does your institutional administration offer a formal microcomputer training program?

    a) 1) no
       2) yes
    b) If yes it is run by
       1) admin personnel
       2) computer center personnel
       3) vendor
       4) tutorial
       5) other

12. Regarding purchasing microcomputers

    a) Do you buy under state contract?
       1) yes
       2) no
    b) Do you buy from a local vendors?
       1) yes
       2) no
    c) What % discounts from vendors do you expect?_____
    d) Is software included?_____
    e) What is your Microcomputer Budget for new machines this year?_____

13. Regarding Service

    a) Who handles the service on your equipment?
    b) Have you purchased service contracts on your micros?
    c) Who pays for service?

14. What are some of the problems your organization has encountered in acquiring and using microcomputers in your organization?

a) Is software piracy a problem? How is it handled?
b) Is utilization of micros good or do they sit idle in some offices?
c) Is linking a problem?
d) Is enforcing standards a problem?

Other Comments_____